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FIG. 1

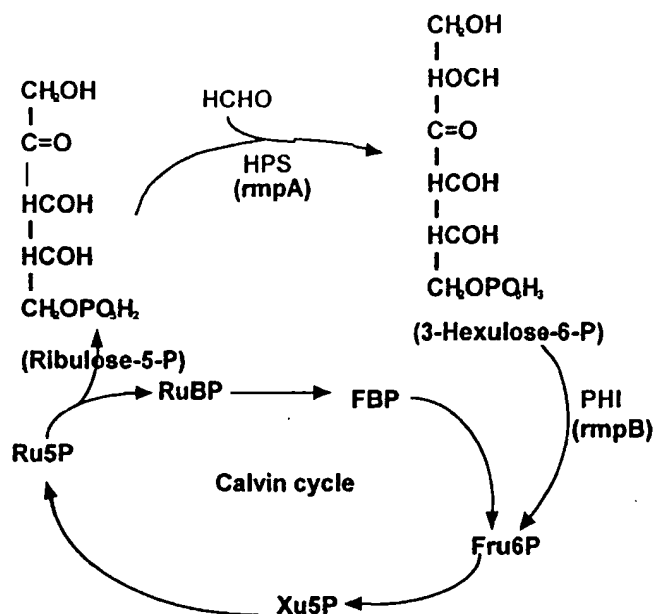
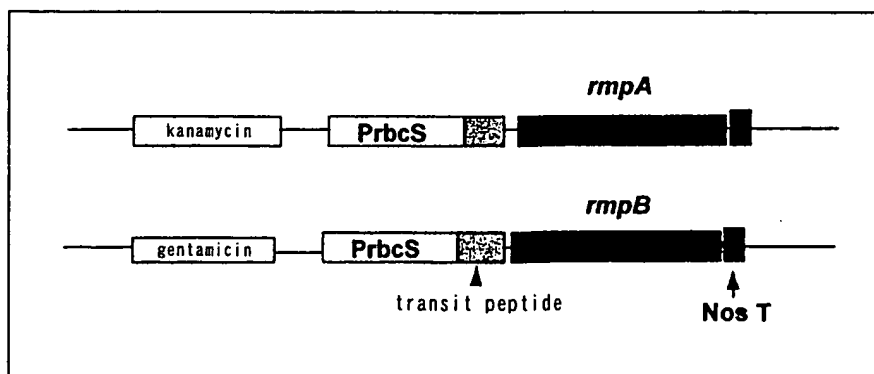
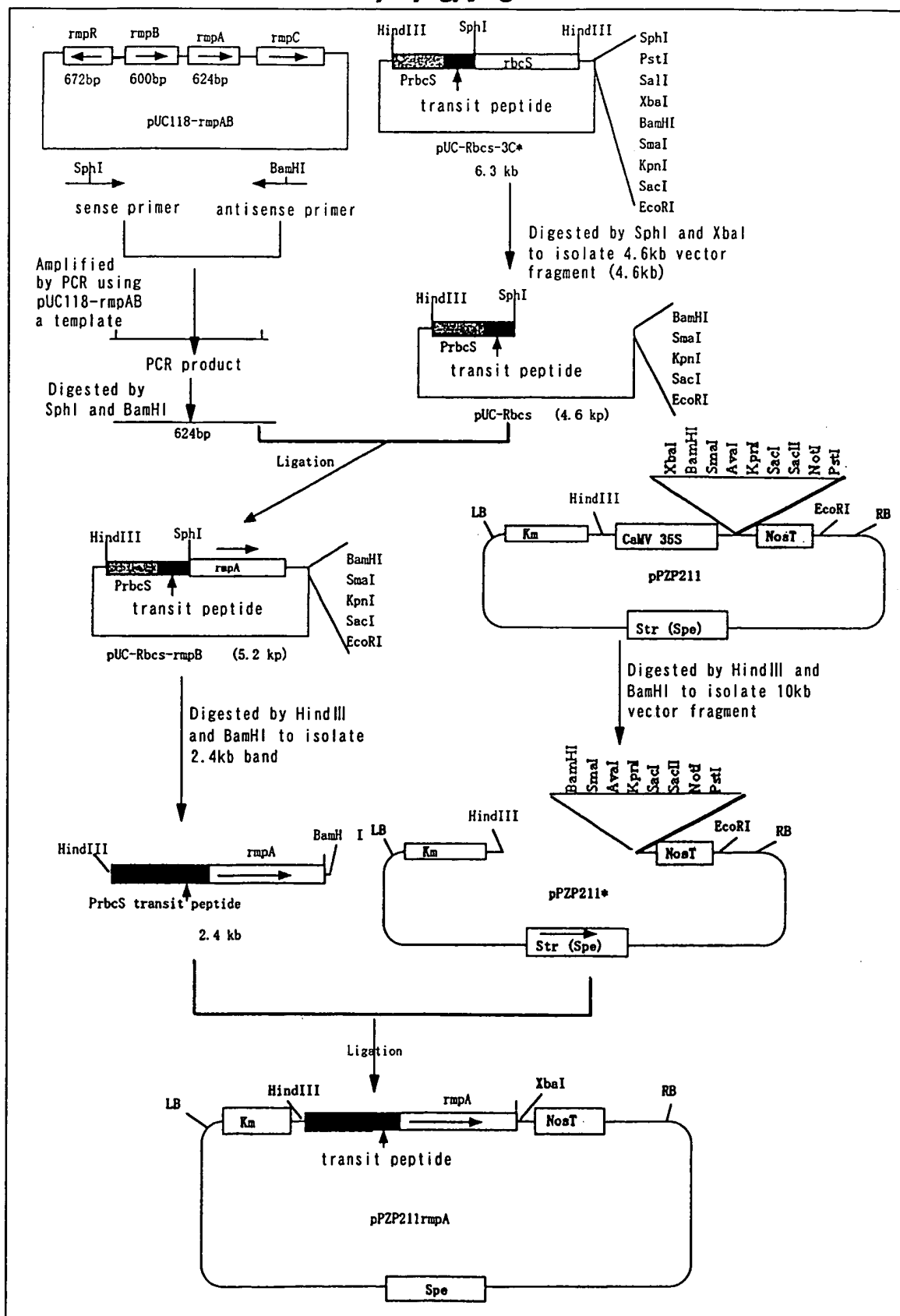


FIG. 2

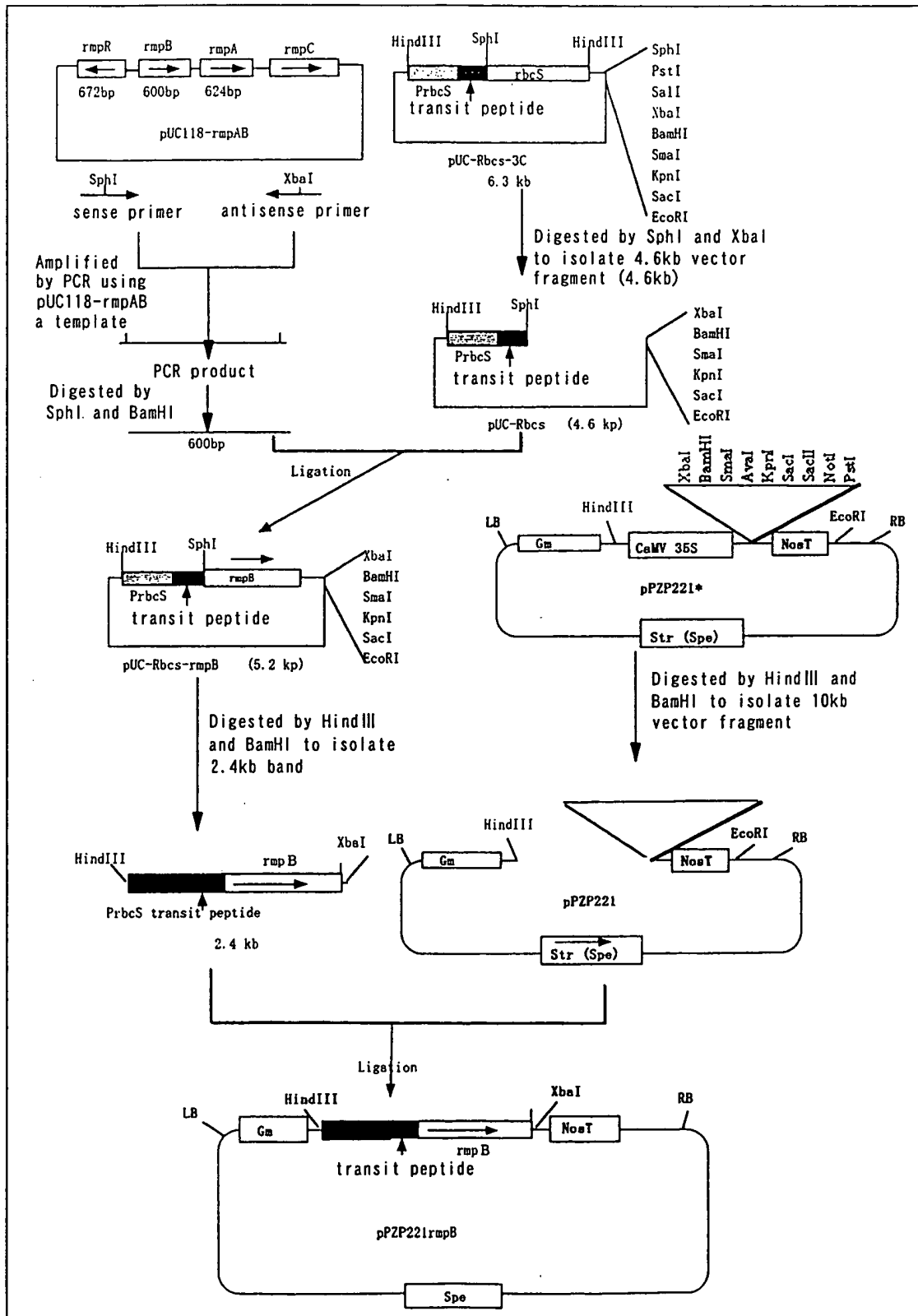


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**FIG. 3**



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FIG. 4



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## FIG. 5

Primer for amplification of rmpA gene by PCR

rmpA-sense (2506-2530)

GCATGCAAGGGGTAACCATGACG

rmpA-antisense (3150-3129)

TCTAGAGGATCAGGCGATCCG

Sequence of transit peptide (accession: X05986)

atg

301 gcttcttcag taatgtcttc agcagctgtt gccacccgcg gcaatggtgc acaagctagc  
361 atggttgac ccttcaactg actcaagtcc accgcttctt tccctgttcc aaggaagcaa  
421 aaccttgaca ttacctccat tgctagcaac ggtggaagag tcagttgc

Sequence of rmpA gene (accession: AB034913)

atg

2521 aagctccaag tcgccatcga cctgtgttcc accgaagccg ccctcgagct ggccggcaag  
2581 gttgccgagt acgtcgacat catcgaactg ggacaccccc tgatcgaggc cgagggcctg  
2641 tcggtcatca ccgccgtcaa gaaggctcac ccggacaaga tcgtcttcgc cgacatgaag  
2701 accatggacg ccggcgagct cgaagccgac atcgcggttca aggccggcgc tgacctggtc  
2761 acggtcctcg gtcgggccga cgactccacc atcgcggttg ecgtcaaggc cgcccaggct  
2821 cacaacaagg gcgtcgtcgt cgacctgac ggcatcgagg acaaggccac ccgtgcacag  
2881 gaagttcgcg ccctgggtgc caagttcgtc gagatgcacg ctggtctgga cgagcaggcc  
2941 aagcccggct tcgacctgaa cggctctgct gccgccggcg agaaggctcg cgttccgttc  
3001 tccgtggccg gtggcggtgaa agttgcgacc atccccgcag tccagaaggc cggcgcagaa  
3061 gttgccgtcg ccggtggcgc catctacggt gcagccgacc cggccgcgcg cgcgaaggaa  
3121 ctgcgcgcg cgatcgctg atcctgatg

Cleavage site

MASSVMSSAAVATRGNAQAQSMVAPFTGLKSTASFFVSRKQNLDTISIASNGGRVSC

MKLQVAID

LLSTEAAL ELAGKVAEYVDI IELGTPLIEAEGLSVITAVKKAHPDKIVFADMKTMDAGELEADIAFKAGADL  
VTVLGSADDSTIAGAVKAAQAHNKGVVVDLIGIEDKATRAQEVRLGAKFVEMHAGLDEQAKPGFDLNGLLA  
AGEKARVPFSVAGGVKVATI PAVQKAGAEVAVAGGAIYGAADPAAA AKELRAAIA

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## FIG. 6

### DNA sequence used for vector construction

Primer for amplification of rmpB gene by PCR

rmpB-sense (1825-1850)

GCATGCAAGGGTAACCATGACG

rmpB-antisense (2456-2435)

TCTAGATCCGGTCACTGAG

### Sequence of transit peptide (accession:X05986)

atg

301 gcttcttcag taatgtcctc agcagctggt gccacccgcg gcaatgggtgc acaagctagc  
361 atggttgcaac ccttcactgg actcaagtc accgcttctt tccctgtttc aaggaagcaa  
421 aaccttgaca ttacctccat tgctagcaac ggtggaagag tcagttgc

### Sequence of rmpB gene (accession: AB034913)

atgacg caagccgcag

1861 aagccgacgg cgccgtgaag gtcgtcggag acgacatcac caacaacctt tcccttggtc  
1921 gggacgaggt cgcggacacc gcggcgaaag tcgacccgga gcaggtggct gtcctcgctc  
1981 gccaaatcgt ccagcctgga cgggttttcg tggcgggcgc cggtcgcagc gggctcgtec  
2041 tgcgcgatggc cgccatgcgg ctgatgcact tcggcctcac cgtgcacgtc gcgggcgaca  
2101 ccaccacccc ggcaatctca gccggcgatc tgctgctggt ggcttcgggc tcgggcacca  
2161 cctccggtgt ggtcaagtcc gccgagacgg ccaagaaggc cggggcgcg ctcgccgctc  
2221 tcaccaccaa cccgattct ccgctggccg gtctggccga cgcctgggtg atcatccccg  
2281 ccgcgcagaa gaccgatcac ggctgcaca ttctcgcgga gtacgcgga tcccttttcg  
2341 agcaggtgct gttcgtcgtc accgaagccg tgttccagtc gctgtgggat cacaccgagg  
2401 tcgaggccga ggaactctgg acgcgccacg ccaactcga gtgaccgga cctcga

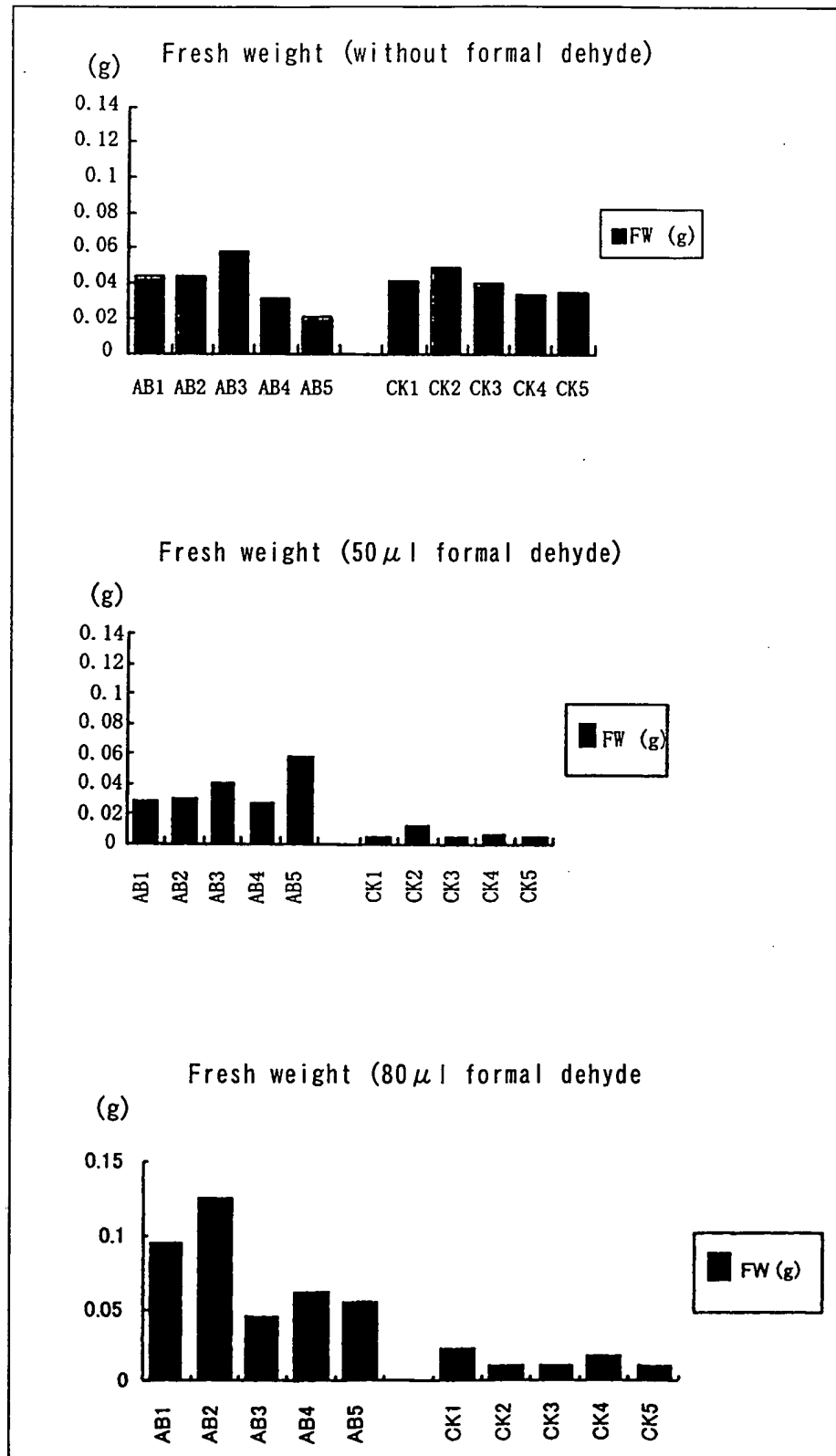
Cleavage site



MASSVMSSAAVATRGNGAQASMVAPFTGLKSTASFPVSRKQNLDTSIASNGGRVSHQAAEADGAVK  
VVGDDITNNLSLVRDEVADTAAKVDPEQVAVLARQIVQPGRVFVAGAGRSLVLRMAAMRLMHFGLTVH  
VAGDTTTPAISAGDLLLVASGSGTTSQVVKSAETAKKAGARIAAFTTNPDSPLAGLADAVVIPAQKT  
DHGSHISRQYAGSLFEQVLFVVTEAVFQSLWDHTEVEAEELWTRHANLE

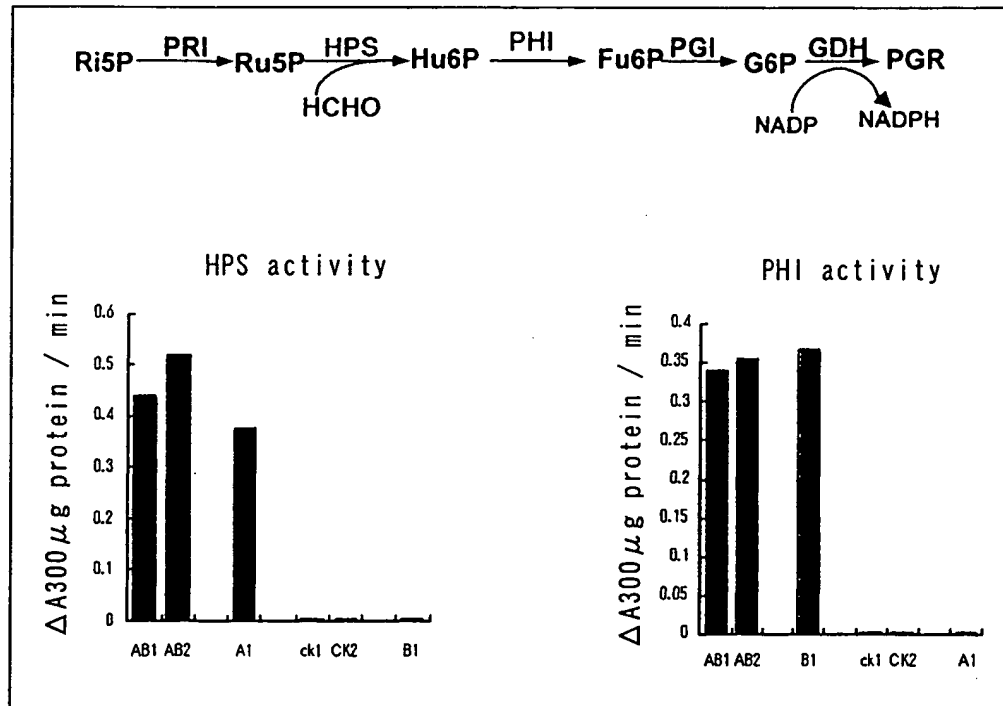
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FIG. 7



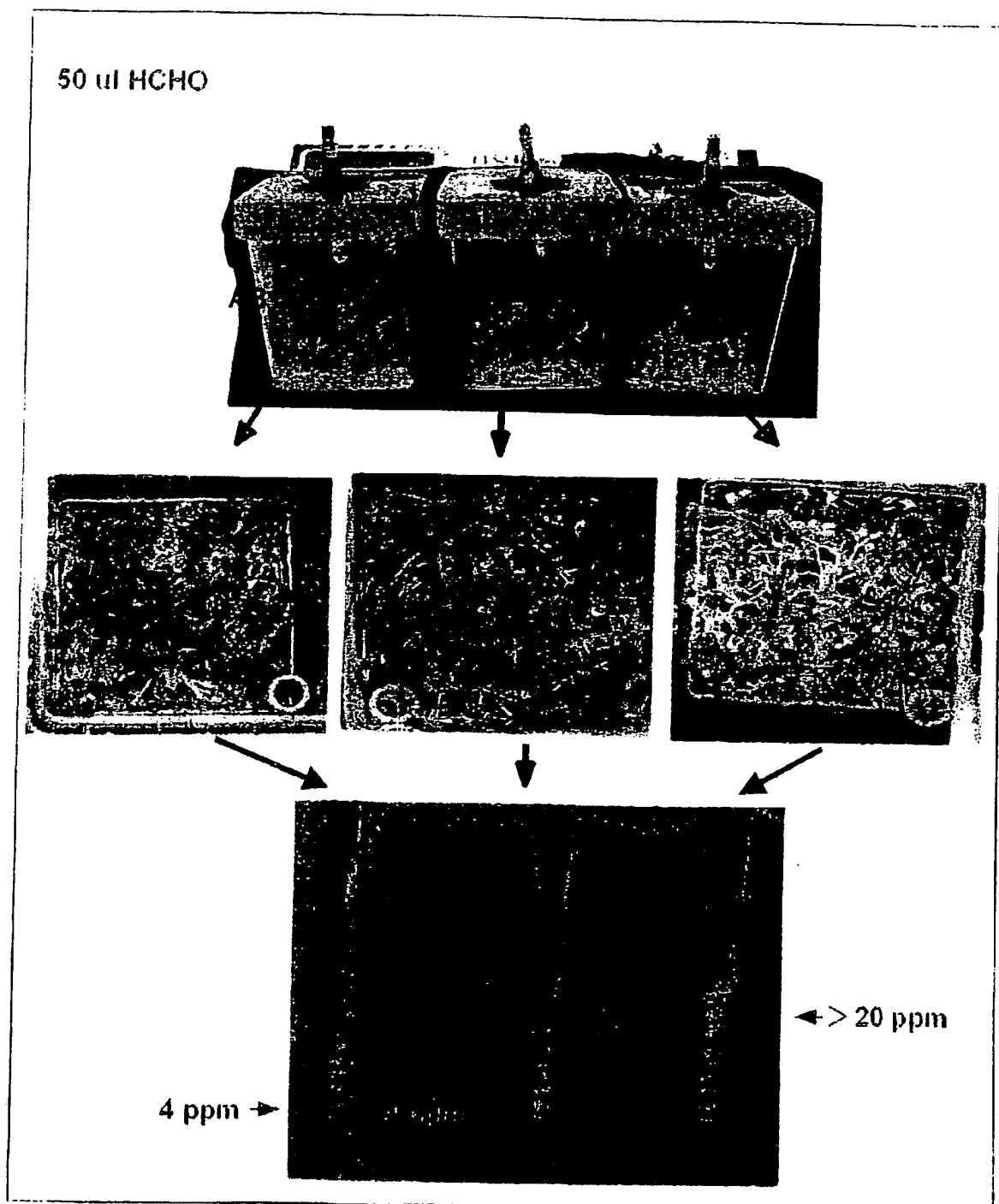
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FIG. 8



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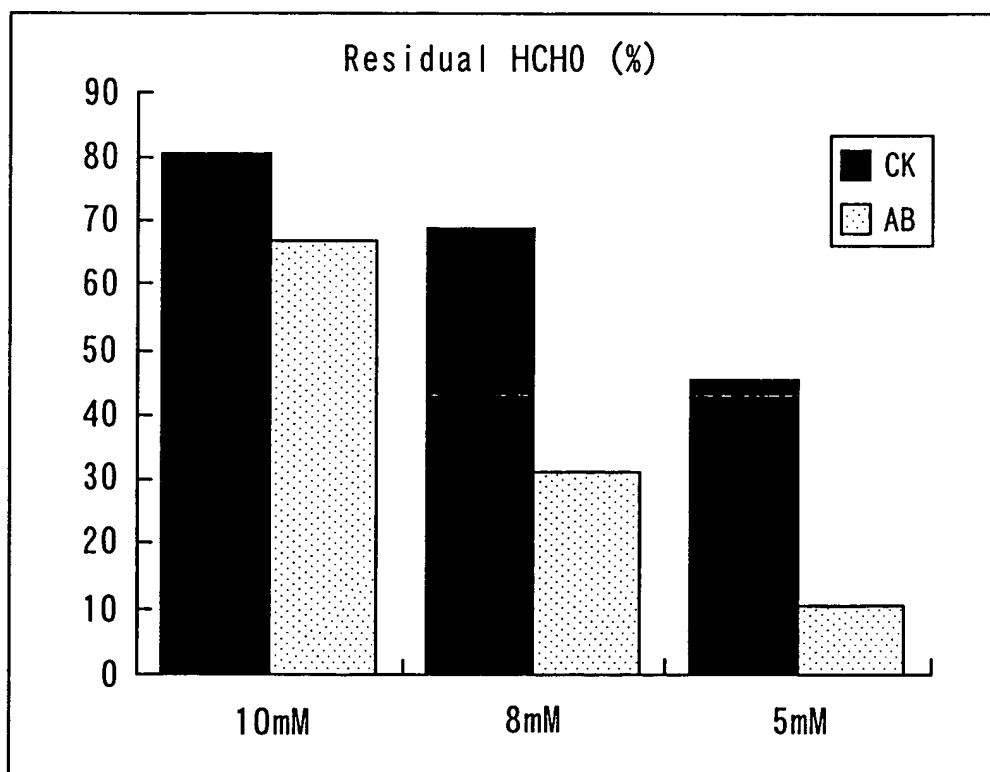
FIG. 9





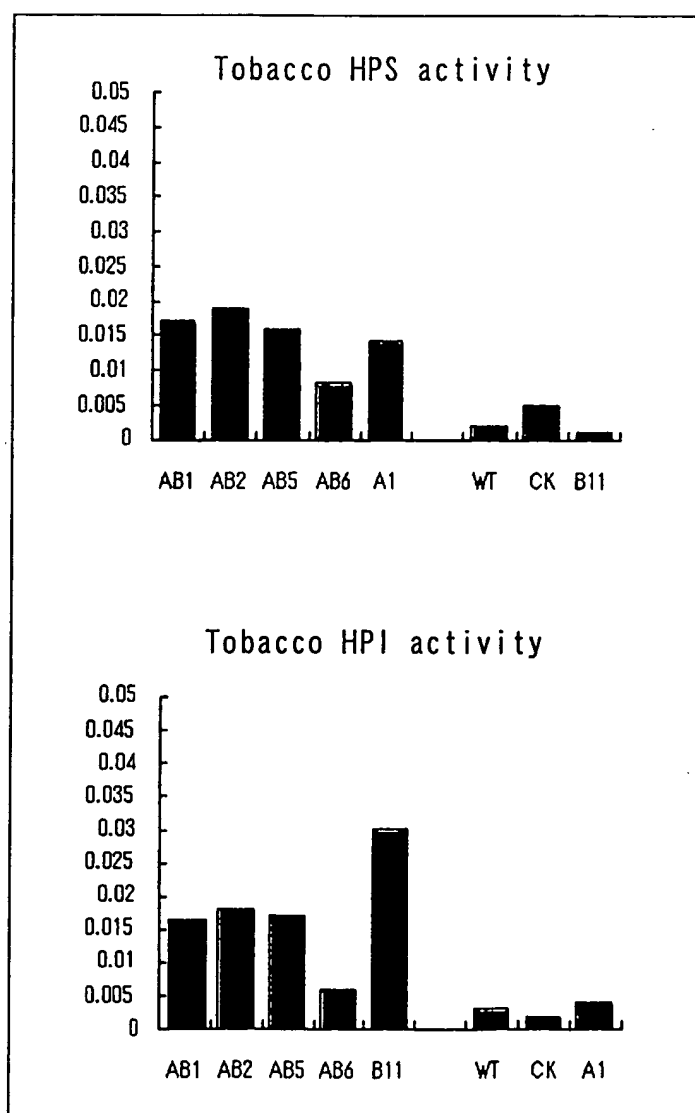
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*FIG. 10*



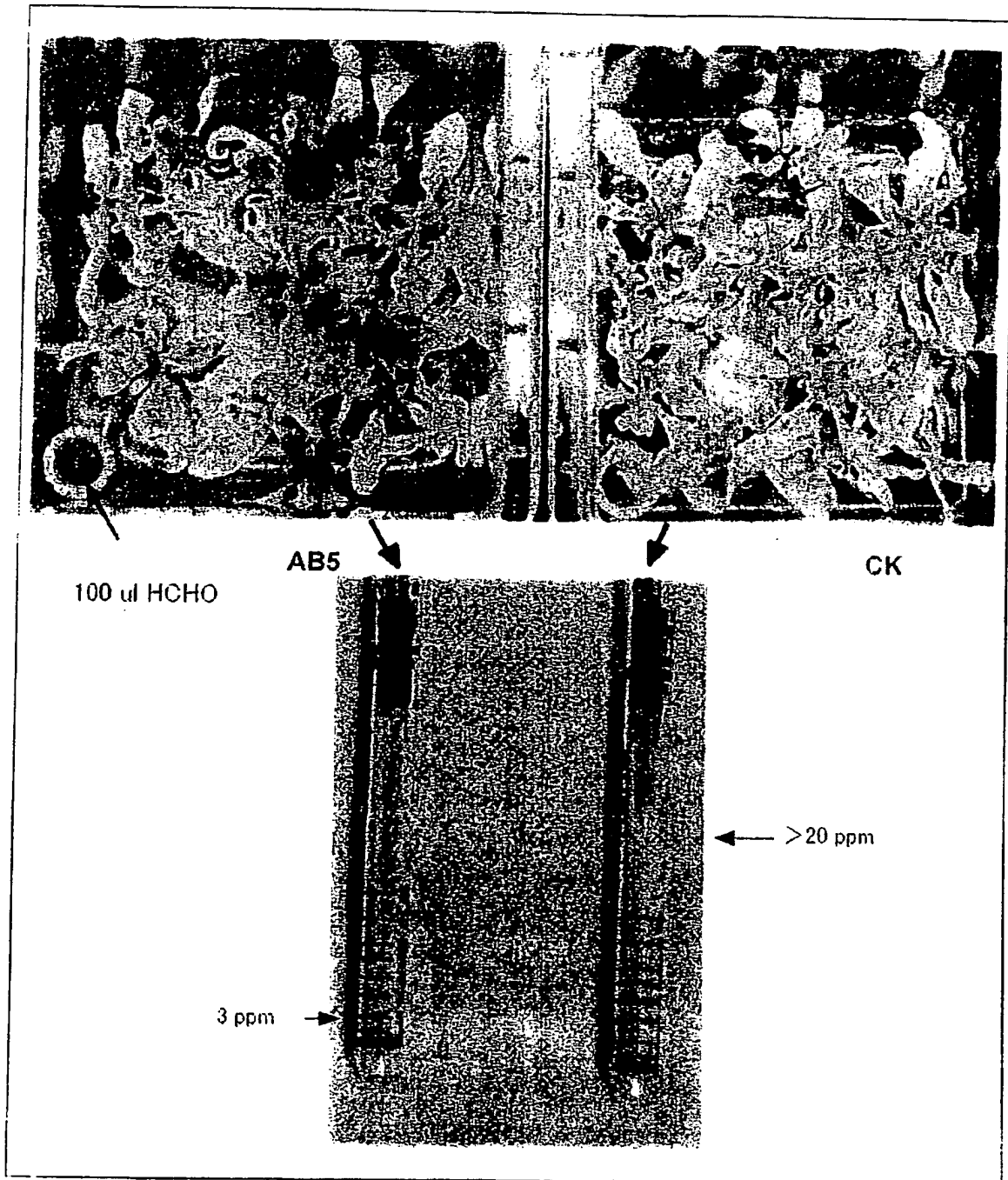
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FIG. 11



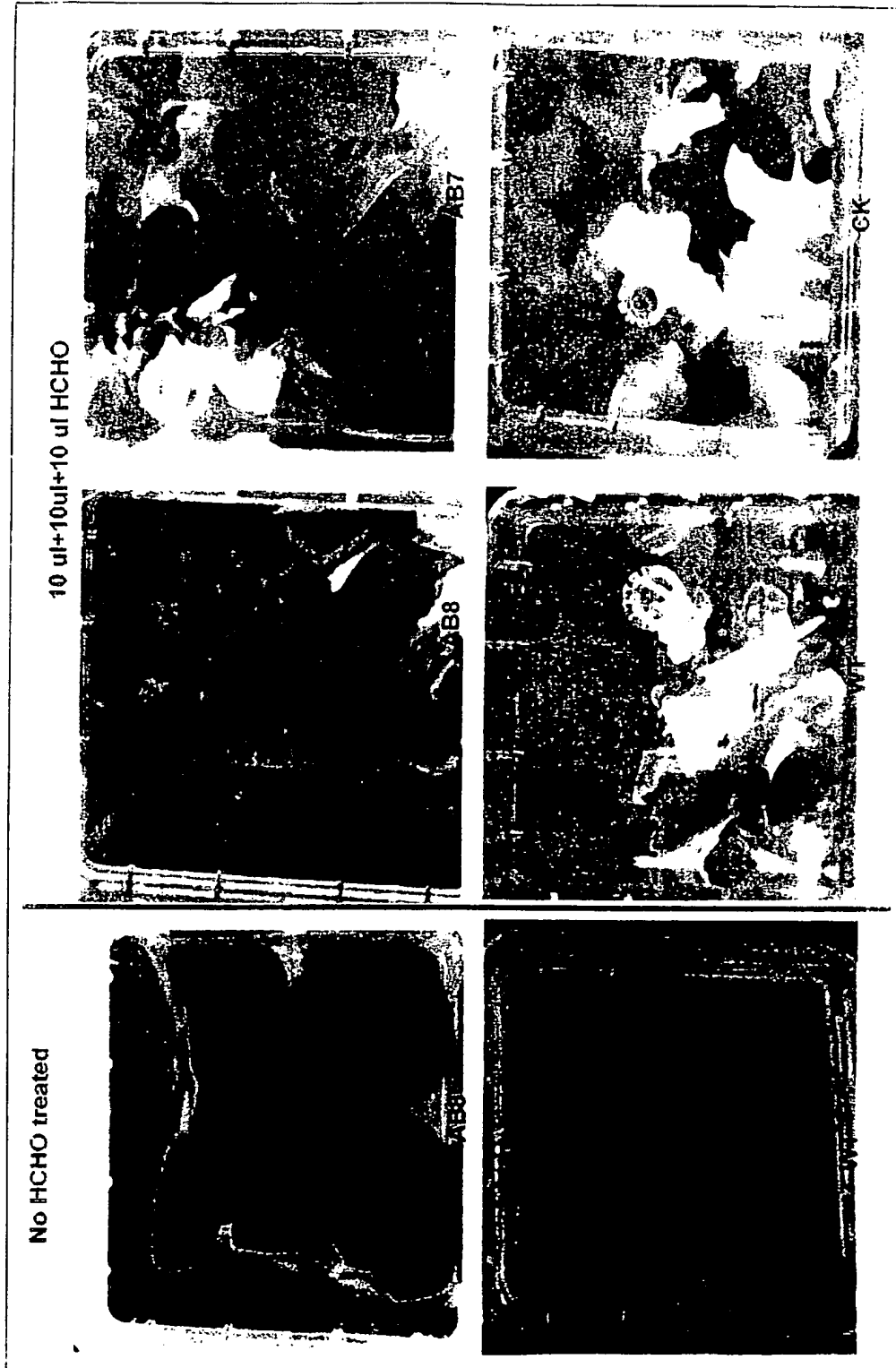
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FIG. 12



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FIG. 13



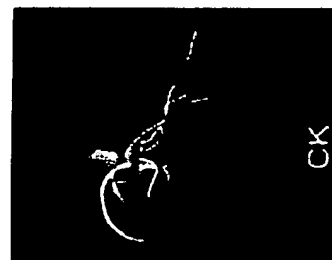
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FIG. 14

Effect to growth of root not having chloroplast (transgenic tobacco)



10 μl HCHO (37%)



2 μl HCHO (37%)



No HCHO

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FIG. 15

